

AMENDMENT UNDER 37 C.F.R. § 1.111

Application No.: 10/630,751

Atty Docket No.: Q71391

REMARKS

The Office Action of October 1, 2004 has been received and its contents carefully considered.

Claims 1 to 12 are all the claims pending in the application.

Claims 1 to 12 have been rejected under the second paragraph of 35 U.S.C. § 112 as indefinite.

The Examiner states that the term “softly magnetic” in claims 1, 9 and 10 is a relative term which renders the claims indefinite.

The Examiner states that the term “softly” is not defined by the claims, and the specification does not provide a standard for ascertaining the requisite degree. The Examiner states that the term “soft magnetic” is an art recognized term. The Examiner states that it is not clear if the metes and bounds of “softly magnetic” and “soft magnetic” are the same.

In response, applicants submit that the term “softly magnetic” layer as used in the claims is the same as the “soft magnetic” layer that the Examiner indicates is an art recognized term. The present specification, at page 7, in Paragraph [0031], describes the function of the “softly magnetic” underlayer, and in Paragraph [0032] gives numerous examples of this material.

The function described at page 7, paragraph [0031] is the same as the function of the “soft” magnetic layer of the prior art.

In view of the description in the specification, applicants submit that one of ordinary skill in the art would understand the meaning of the term “softly magnetic”. Applicants have

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amended the specification and claims throughout to employ the art recognized term “soft magnetic”.

In view of the above, applicants submit that claims 1 to 12 comply with the requirements of the second paragraph of 35 U.S.C. § 112 and, accordingly, request withdrawal of this rejection.

Claims 1 to 12 have been rejected under 35 U.S.C. § 103(a) as obvious over Tomiyasu et al in view of Chang et al.

Applicants submit that Tomiyasu et al and Chang et al do not disclose or suggest the subject matter of claims 1 to 12 and, accordingly, request withdrawal of this rejection.

The present invention as set forth in claim 1 as amended above is directed to a magnetic recording medium having a nonmagnetic substrate on which is provided at least a soft magnetic under-film, an orientation control film that controls an orientation of a film directly above, a perpendicular magnetic recording film having an axis of easy magnetization oriented to be mainly perpendicular to the substrate, and a protective film, wherein the orientation control film is an alloy containing at least Cr and C.

In other aspects, as set forth in dependent claims 9 and 10, the present invention is directed to a method of manufacturing the magnetic recording medium, and as set forth in dependent claims 11 and 12, the present invention is directed to a magnetic recording and reproduction apparatus that contains the magnetic recording medium.

In essence, the Examiner states that Tomiyasu et al disclose all of the recitations of the present claims, but do not disclose the use of a soft magnetic layer and the use of a monopole

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head. The Examiner states that she is interpreting the term “softly magnetic underfilm” to mean a soft magnetic layer.

The Examiner relies on Chang et al to show the use of a soft magnetic layer disposed on a substrate in a perpendicular magnetic recording medium for the purpose of guiding magnetic flux emanating from the magnetic head. The Examiner argues that, therefore, it would have been obvious to one of ordinary skill in the art to add a soft magnetic underlayer on the substrate of Tomiyasu et al.

The Examiner considers that the upper layer (22) of the pre-coat layer (2) in Tomiyasu et al, which upper layer is a Cr containing layer, and which as disclosed at column 4, line 6, can contain C, satisfies the recitations of the present claims of an orientation control film.

In response, applicants submit that the Examiner is not correct that the upper pre-coat layer of Tomiyasu et al can be considered an orientation control layer.

In particular, the orientation control layer of the present claims formed of an alloy containing both Cr and C can control the orientation of an intermediate layer and the orientation of a perpendicular magnetic recording layer, directly on the orientation control layer. With the entire configuration of the present invention including the orientation control layer, it is possible to obtain a magnetic recording medium excellent in recording and reproducing characteristics. As described in the Examples of the present specification, in particular, the present invention is characterized in that the orientation control layer contains C.

There is no disclosure in either Tomiyasu et al or Chang et al concerning an orientation control layer containing C. Therefore, applicants submit that the Examiner’s contention that the

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upper pre-coat layer of Tomiyasu et al can be considered to be an orientation control layer is not correct.

In addition, the description of Tomiyasu et al is centered on a horizontal magnetic recording medium, and does not disclose any example of a perpendicular magnetic recording medium.

In view of the above, applicants submit that Tomiyasu et al and Chang et al do not disclose or suggest the subject matter of claims 1 to 12 and, accordingly, request withdrawal of this rejection.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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